A study to understand the early life history of Snake River Fall Chinook salmon

National Marine
Fisheries Service

2006 Research Objectives

- Collect scale samples from returning adult fall Chinook salmon that had been PIT-tagged as juveniles

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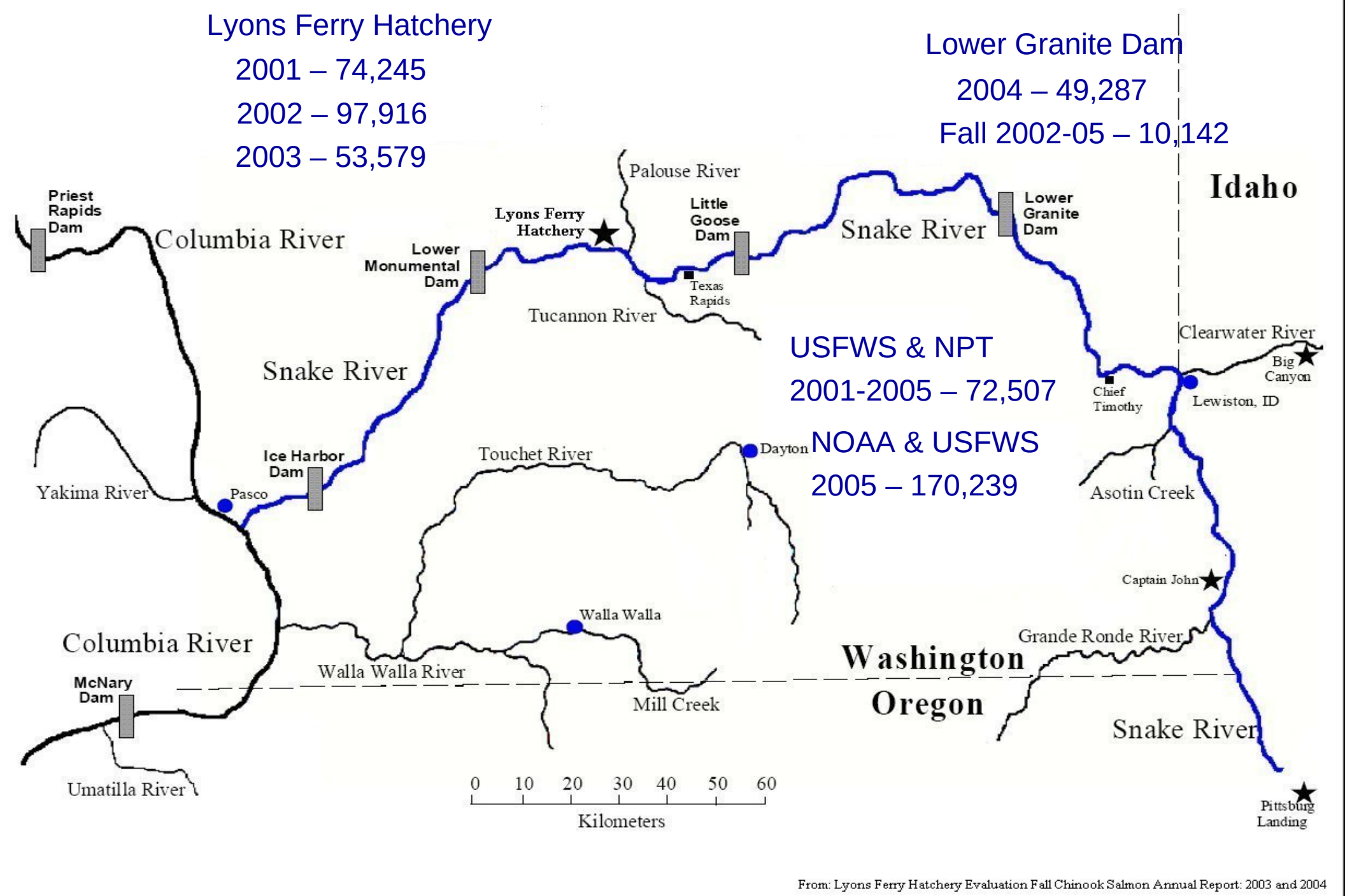
- Compare age-at-ocean-entry with juvenile detection history

Collect scale samples from previously PIT-tagged fish



From: Lyons Ferry Hatchery Evaluation Fall Chinook Salmon Annual Report: 2003 and 2004

USFWS collected scales from 1998-2004
NOAA/USFWS collected scales in 2005

2006 COE Study – Collected scales from 144 NOAA, USFWS, & NPT tagged fish

Determine age-at-ocean-entry

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Compare age-at-ocean-entry with juvenile detection history

2006 scale sampling (135 fish)

Migration pathway	Age at ocean entry	First year wintering location	Return year composition	Last juvenile detection			
				Summer	Fall	Spring	ND
Summer transport (15 fish)							
	Age-0	Saltwater	13	13	-	-	-
	Age-1	Below BON	2	2	-	-	-
Fall transport (55 fish)							
	Age-0	Saltwater	12	-	12	-	-
	Age-1	Below BON	43	-	43	-	-
Migrant (65 fish)							
	Age-0	Saltwater	39	10	-	-	29
	Age-1	Reservoir	6	-	-	6	-
	Age-1	Unknown	20	-	3	-	17

2006 scale sampling

Study year	Juvenile detection history	Age at entry to saltwater		
		Subyearling	Yearling	Unknown
2001	ND	-	1	-
2002	ND	-	2	1
	Tran	3	5	-
	Fall-T	1	6	1
	Holdovers	-	1	-
2003	ND	-	1	-
	Tran	1	-	-
	Fall-T	7	6	5
	Holdovers	-	1	-
2004	ND	1	-	-
	Bypass	2	-	-
	Tran	6	-	-
	Fall-T	3	9	-
	Holdovers	-	2	-
2005	ND	28	13	1
	Bypass	8	3	-
	Tran	3	9	-
	Fall-T	1	10	-
	Holdovers	-	2	1

2006 scale sampling
- Average adult length (mm)

Age at ocean entry	Total age (years) 2 n	2 Length	3 n	3 Length	4 n	4 Length	5 n	5 Length
Age-0	40	472.0	12	679.2	8	861.3	4	857.5
Age-1	36	433.0	11	623.6	8	820.0	14	825.0

2006 scale sampling
- Years at sea

Age at ocean entry	Years at sea					
	<1	1	2	3	4	5
Age-0	-	40	12	8	4	0
Age-1	37	11	8	14	1	0

2006 scale sampling

Conclusions:

- Transported fish exhibit both subyearling and yearling life histories

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- Adults with a subyearling life history are larger than those with a yearling life history

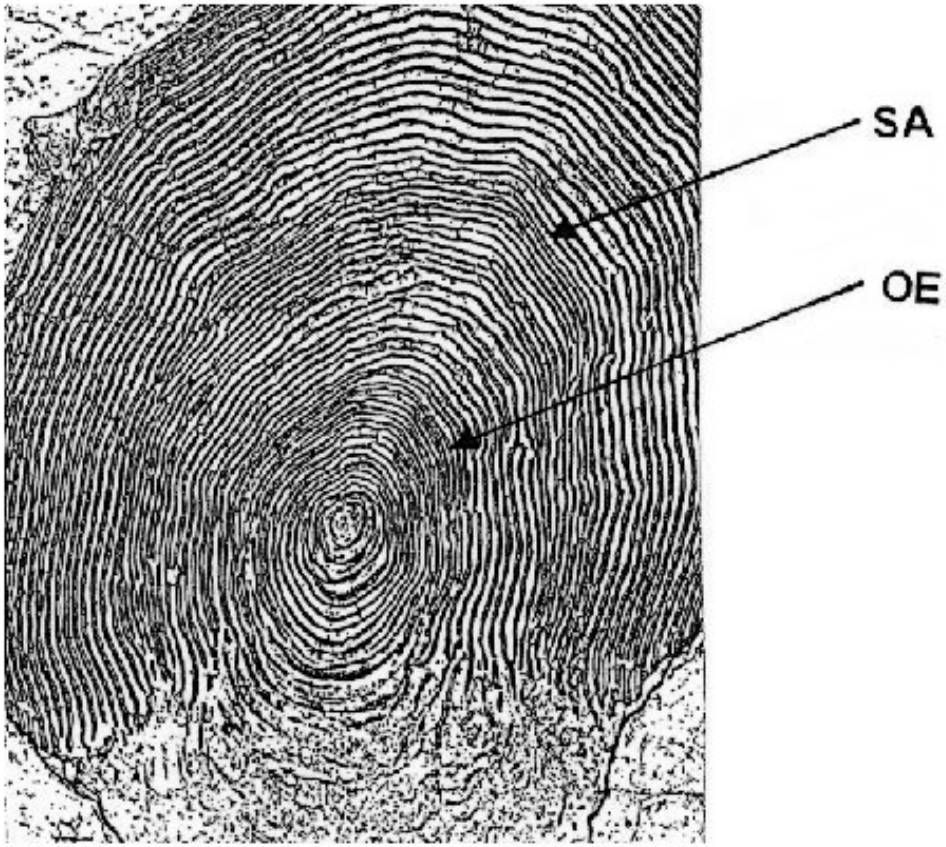
2006 scale sampling

Conclusions:

- Transported fish exhibit both subyearling and yearling life histories
- Adults with a subyearling life history are larger than those with a yearling life history
- Yearling ocean entrants return after less time at sea than subyearling ocean entrants

2007 scale sampling

- Over 600 adults sampled
- Age class breakdown
  - 2002 1
  - 2003 6
  - 2004 26
  - 2005 100
  - 2006 494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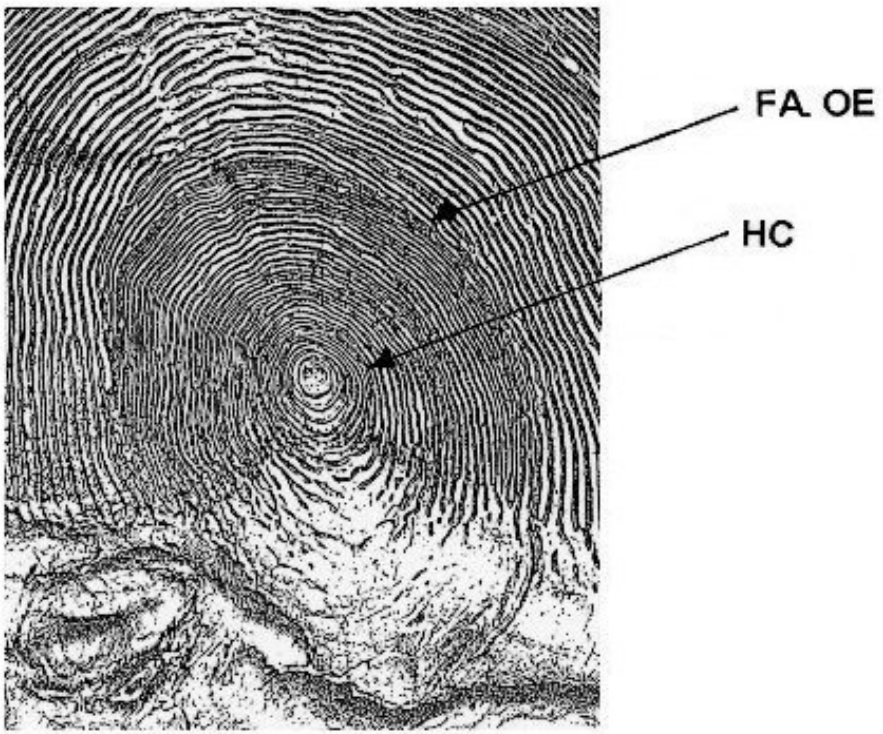
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